

WHAT IS CLAIMED IS:

1. A power control device for automatically turning on power to a radio mobile terminal connected to a hands-free kit, comprising:

5 a circuit in said radio mobile terminal comprising a power control signal generator for generating a power control signal to supply power to said radio mobile terminal, a signal output terminal connected to said power control signal generator, for generating a driving signal to enable said power control signal generator, and a signal input terminal connected to a power key of said radio mobile terminal, for receiving a power-on signal; and

10 a circuit in said hands-free kit comprising a power-on signal generator connected between said power key and said signal input terminal, for generating said power-on signal, a signal detector connected between said signal output terminal and said power control signal generator, for detecting said driving signal generated by said signal output terminal, and a controller for controlling said power-on signal generator to generate said power-on signal depending on whether said driving signal generated by said signal output terminal is detected through said signal detector.

20 2. A power control method for automatically turning on power to a radio mobile terminal connected to a hands-free kit, a circuit in said radio mobile terminal including a power control signal generator for generating a power control signal to supply power to said radio mobile terminal, a signal output terminal for generating a driving signal to enable said power control signal generator, and a signal input terminal connected to a power key of said radio mobile terminal, for receiving a power-on signal, and circuit in said hands-free kit including a power-on signal generator connected between said power key and said signal input

25

10

terminal, for generating said power-on signal, and a signal detector connected between said signal output terminal and said power control signal generator, for detecting said driving signal generated by said signal output terminal, said method comprising the steps of:

5 supplying said power-on signal to said signal input terminal for a predetermined time period through said power-on signal generator when said radio mobile terminal is connected to said hands-free kit;

 determining if said driving signal generated by said signal output terminal is detected through said signal detector; and

10 terminating said power-on signal upon detection of said driving signal.

3. The power control method as claimed in claim 2, further comprising the step of returning to said step of supplying said power-on signal if said driving signal is not detected.

15 4. A power control device for preventing malfunction of a radio mobile terminal connected to a hands-free kit during a call, comprising:

 a power control signal generator for generating a power control signal to supply power to said radio mobile terminal;

20 a signal output terminal connected to said power control signal generator, for generating a driving signal to enable said power control signal generator;

 a signal input terminal connected to a power key on a key pad of said radio mobile terminal, for receiving a power on/off signal;

25 a switching circuit having an input terminal connected to said hands-free kit and having an output terminal connected between said signal output terminal and said power control signal generator and between said power key and said

signal input terminal, wherein said switching circuit is enabled or disabled according to said driving signal provided from said signal output terminal; and

a controller for controlling said signal output terminal to generate said driving signal according to said power on/off signal applied to said signal input terminal.

5 5. The power control device as claimed in claim 4, wherein said switching circuit includes:

a first resistor interposed between said hands-free kit and ground;

10 a second resistor interposed between said hands-free kit and said signal output terminal;

a PNP transistor having an emitter connected to the hands-free kit and a collector connected between said signal output terminal and said power control signal generator; and

15 a third resistor interposed between a base of said PNP transistor and said signal output terminal.